

REMARKS

Claims 23-40 are pending in the application. Claims 32-40 are withdrawn as being drawn to non-elected inventions. Claims 23-31 are under active consideration. Claims 23, 24, and 28 have been amended such that they no longer depend from non-elected claims. This amendment addresses the Examiner's objection to the claims. The present amendment does not introduce new issues, and places the subject application in condition for allowance and/or simplifies issues for appeal. Accordingly, entry of the amendment is proper and respectfully requested. Applicants reserve the right to prosecute non-elected subject matter in subsequent divisional applications.

Rejoinder of Claims

The Examiner is reminded that claims 32-34 and 38, drawn to methods of using the elected polynucleotides of Group II should be rejoined per the Commissioner's Notice in the Official Gazette of March 26, 1996, entitled "Guidance on Treatment of Product and Process Claims in light of *In re Ochiai*, *In re Brouwer* and 35 U.S.C. § 103(b)" which sets forth the rules, upon allowance of any product claim, for rejoinder of process claims covering the same scope of products. Applicants request that claims 32-34 and 38 be rejoined and examined upon allowance of any claim drawn to the polynucleotides of Group II.

Objections to the claims

Claims 23-31 are objected to because of their dependence from non-elected claims 21 or 22. In order to expedite prosecution, Applicants have amended claims 23, 24, and 28 such that they no longer depend from non-elected claims. Therefore, withdrawal of the objections to the claims is respectfully requested.

Utility Rejections under 35 U.S.C. §101 and §112, First Paragraph

Claims 23-31 have been rejected under 35 U.S.C. §101 and §112, first paragraph, because the claimed invention allegedly "is not supported by either a credible asserted utility or a well-established utility" (Final Office Action, page 3). These rejections are traversed for the reasons already made of record in the Declaration of Dr. Tod Bedilion and the response to the Office Action of April 4, 2003.

Enablement rejections under 35 U.S.C. § 112, first paragraph

Claims 23, 26, 27, 28, and 30 are rejected for allegedly failing to meet the requirements of 35 U.S.C. § 112, first paragraph, on the grounds that the Specification does not provide an enabling disclosure commensurate in scope with the claims (Final Office Action pages 4-5). Applicants traverse the rejection for the reasons already made of record in the response to the Office Action of April 4, 2003 and on the following grounds.

The Examiner alleges that “the specification does not teach the specific structural/catalytic amino acids and the structural motifs essential for protein activity/function which cannot be altered. Such experimentation entails selecting specific nucleotides to change (deletion, insertion, substitution, or combinations thereof) in a polynucleotide to make the claimed polynucleotide and determining by assays whether the polypeptide has activity” (Final Office Action, page 4). This is untrue. Again, Applicants respectfully point out that the claims of the instant application are drawn to **naturally-occurring** variants. Thus it is not necessary to screen every conceivable variant which might be made using recombinant methods, as all that is claimed are those variant sequences which are found in nature. Through the process of natural selection, nature will have determined the appropriate sequences.

Given the sequences of SEQ ID NO:1 and SEQ ID NO:2, one of ordinary skill in the art could readily identify a polynucleotide encoding a polypeptide comprising a naturally occurring amino acid sequence at least 90% identical to an amino acid sequence of SEQ ID NO:1 or a polynucleotide comprising a naturally occurring polynucleotide sequence at least 70% identical to a polynucleotide sequence of SEQ ID NO:2, using well known methods of sequence analysis without any undue experimentation. For example, the identification of relevant polynucleotides could be performed by hybridization and/or PCR techniques that were well-known to those skilled in the art at the time the subject application was filed and/or described throughout the Specification of the instant application. See, e.g., page 12, line 13 through page 13, line 9; page 25, lines 2-6 and 18-28; and Example VI at pages 45-46. Thus, one skilled in the art need not make and test vast numbers of polynucleotides. Instead, one skilled in the art need only screen a cDNA library or use appropriate PCR conditions to identify relevant polynucleotides that already exist in nature. The skilled artisan would also know how to use the claimed polynucleotides, for example in expression profiling, disease diagnosis, or detection of related sequences as discussed previously.

Applicants also point out that the specification does teach “specific structural motifs essential for protein activity/function.” The specification describes similarities between SEQ ID NO:1 and *C. elegans* myosin (g1279777) and *H. annuus* unconventional myosin (g2444174), including the presence of the myosin head domain, myosin heavy chain, and light chain binding site signatures (see specification, for example, at page 17, line 26 through page 18, line 9 and Figure 2). The myosin head domain is known to possess ATPase activity and contain actin binding sites. At the time of filing of the instant application, the crystallographic structure of a myosin motor head was available to assist one of skill in the art in the determination of “specific catalytic residues and structural motifs,” particularly those critical for ATPase activity and actin binding (See reference of Rayment et al. (1993) Science 261:50-58, previously submitted with the response to the Office Action of April 4, 2003).

For at least these reasons, withdrawal of the enablement rejection under 35 U.S.C. § 112, first paragraph, is respectfully requested.

Written description rejections under 35 U.S.C. § 112, first paragraph

Claims 23, 26, 27, 28, 30, and 31 have been rejected under the first paragraph of 35 U.S.C. 112 for alleged lack of an adequate written description. Applicants traverse the rejection for the reasons already made of record in the response to the Office Action of April 4, 2003.

CONCLUSION

In light of the above amendments and remarks, Applicants submit that the present application is fully in condition for allowance, and request that the Examiner withdraw the outstanding objections/rejections. Early notice to that effect is earnestly solicited.

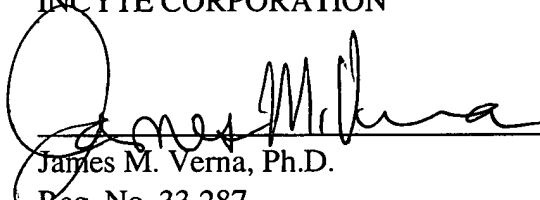
If the Examiner contemplates other action, or if a telephone conference would expedite allowance of the claims, Applicants invite the Examiner to contact the undersigned at the number listed below.

Applicants believe that no fee is due with this communication. However, if the USPTO determines that a fee is due, the Commissioner is hereby authorized to charge Deposit Account No. 09-0108.

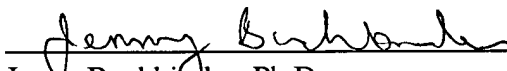
Respectfully submitted,

INCYTE CORPORATION

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James M. Verna, Ph.D.
Reg. No. 33,287
Direct Dial Telephone: (650) 845 -5415

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Jenny Buchbinder, Ph.D.
Reg. No. 48,588
Direct Dial Telephone: (650) 843-7212

Customer No.: 27904
3160 Porter Drive
Palo Alto, California 94304
Phone: (650) 855-0555
Fax: (650) 849-8886